

Assessment of Stakeholder Engagement in Construction Project: An Empirical Study of Keenjhar Lake Project

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Abstract: Project stakeholders in construction as well as in public sector projects are playing a vibrant role in successful deliverance of project. Several research studies in stakeholder management believe that project stakeholder is a bilateral approach that helps in managing stakeholders in public sector projects. The purpose of this study is to assess the level of stakeholder engagement in Keenjhar Lake Water Project, Thatta, Sindh, Pakistan. Survey questionnaire were distributed amongst the respondents. Data was collected through questionnaire survey forms and were analyzed using statistical tools to establish the relationship between the variables. Findings of study reveal that several stakeholders have been identified. Level of stakeholder engagement has been measured in five (5) parameters: Interview, Negotiations, Meetings, Workshops, Seminars and Social Contacts. However, all these levels depicts that other project stakeholders could be approached through different methods and convinced all partners to engage with stakeholders that help in achieving project objectives successfully. Similarly, stakeholder engagement approaches are keystone that helps in managing stakeholders and understanding stakeholder's concerns in construction projects which can be a supportive mechanism in building relationships among stakeholders. This study help academics, project managers, construction and consulting firms to understand the dynamics of stakeholder management in adopting proactive strategies to handle the challenges depending on the nature of issues and its impact on the projects.

Keywords: Public Sector, Building Relationship, Successful Deliverance, Level of Engagement, Engagement Approaches, Proactive Strategies.

INTRODUCTION

Karachi is the most populous city of Pakistan comprising of 14.9 million (PBS Report, 2017). It is capital of Sindh province and largest city in Pakistan. The megacity receives bulk supplies from Hub Dam in Balochistan and Keenjhar Lake in Thatta, Sindh (NESPAK, 2018). The Hub Dam depends on the rainfall while most of water supply to Karachi depends on Keenjhar Lake through Dhabeji pumping station (The Nation, 2019). Presently, Karachi faces an acute water shortage and most of the population is suffering from water scarcity. The climatic change in the country has also impacted the environment as well water problem in mega city. In addition, Pakistan is one of the vulnerable countries to climate change.

This vulnerability is mainly due to its geographic location, demographic and diverse climatic conditions. Building resilience and adaptation to climate change is becoming indispensable for Pakistan (Pakistan Today, 2019).

Keenjhar Lake Water Project was proposed by Government of Sindh in the year 2005 for the purpose of supplying water to Karachi. In addition to this, it was approved by government of Sindh for three years period and approved PC1 cost estimate Rs. 3422.782 Million (Revised) PC1, 2005 (NESPAK, 2018).

After the approval, a contract was signed with consultants and contractors for providing professional services in the project. This project aims to provide sustainable water supply to Karachi through Keenjhar lake system that will help out the biggest population facing water scarcity, industries face with acute water shortages as well as providing sustainable agriculture benefits to Thatta district. However, the banks of Keenjhar Lake embankments were deteriorated (NESPAK, 2018) and normal supply level of KB Feeder (upper) which flows into Keenjhar Lake was 9100 cusecs, but due to damaged section and buildup of silt has disrupted flow of water has maximum flow of 8500 cusecs (Atta Muhammad, 2010).

STAKEHOLDER ENGAGEMENT

Freeman (1984) defined stakeholder as an individual or group that can give affect or influence for achievement of organizational goals. Project stakeholder management comprised of several functions of management: Planning, Organizing, Motivating, Directing and Controlling. (PMI, 2017) defines different stakeholder management approaches such as identifying stakeholders, planning stakeholder engagement, managing stakeholder engagement, and controlling stakeholder engagement.

Stewart (2019) defined the process of stakeholder engagement is a continual process of phases including schedule, execution, assessment, meeting, development and progress. More to the point, institutions engaged on projects provides a plan to negotiate, coordinate and resolve issues through effective engagement processes (Durham et.al, 2019). These approaches help in coordinating and managing stakeholders that obviously lead project to successful delivery.

Moreover, public sector projects encompass appropriate skills and techniques that go beyond technical expertise to manage projects. Some methods for stakeholder engagement can be applied like workshops, interview etc., (Ballejos and Montagua, 2017) in order to identify stakeholder engagement level or go for more analysis (Reed, 2008). Bebbington et al., (2007) defined stakeholder engagement a two-way process that have complexities in common and that is called weakness of an organization. Engagement process based on individuals and groups involved in the project which are affected by the actions of an organization (Greenwood, 2007; Sloan, 2009). Cumming (2001) stated that stakeholder engagement improves an organization's "social and ethical accountability and performance".

Stakeholder engagement is described as a bilateral approach through which decision making is made to avoid conflicts in the organization. Cooper and Owen (2007) stated that objective of the stakeholder engagement is: "Drive strategic direction and operational excellence for organizations and to contribute to the kind of sustainable development from which organizations, their stakeholders and wider society can benefit by learning, innovating and performing".

Engagement is the process to learn, listen from stakeholder and process to change the information. Stakeholder engagement is creating a good understanding among all participating stakeholders on one platform regarding project issues and develops a good relationship. More to the point, stakeholder engagement in organization can play an important role in understanding expectation and different stakeholder interest in projects. It helps organizations that involve people in achieving organizational goals and objectives through broader understanding, influence and implementation of decision making through mutual understandings that help in achieving project objectives.

A construction project affects stakeholders in both positive and negative methods. The positive effects better communication, better housing or higher standards of living whereas the negative side of a construction project can be deterioration of the physical environment for the affected stakeholders (Olander, 2006). Stewart (2019) defined the process of stakeholder engagement is a continual process of phases including schedule, execution, assessment, assemble, develop and progress. They investigate the influence of stakeholder management trust in project environments and suggest models for potential research. Identification, classification and monitoring, involvement, engagement, trust relationships, integrity, competence involvement and engagement. Furthermore, several studies focused on defining/identifying stakeholders and the uncertainties involved in the project. Accordingly, the method evaluates both internal and external stakeholders, particularly in the last stage of the framework;

stakeholders can take charge of managing events of a problem in providing opportunities. In addition, the role of stakeholder is important in terms of defining hard and soft features of the project. However, construction projects for instance, can be useful to one stakeholder group and have a negative impact on another. To understand each other's viewpoints help to build relationships, thus avoiding preconceived ideas and assumptions (Watson T. et al., 2002). Thus, project management must be able to analyse the various demands presented by stakeholders and resolve differences if any, and main stakeholder must facilitate every stakeholder and resolve all outstanding issues through direct communication with others. This study aims to explore research which is significantly important for stakeholder management in construction projects. Moreover, it will assess level of stakeholder engagement in construction project. The paper shall be consisted of Introduction followed by Literature review, research methodology, results and discussion, last section will include conclusion and recommendations for future research.

LITERATURE REVIEW

The project management system in developing countries is different from developed countries because construction industry is an emerging industry and developing countries are far behind economically, politically, and technologically when compared to their industrial counterparts (W. Jackal, 2003). Scott (2016) conducted research on those tools, techniques and knowledge are basic methods to be utilized in all phases of project and this approach is utilized to eradicate problems and challenges faced by project stakeholders. Besides, project management comprised of strategic tools and techniques used in all stages of project that may control growing problems and reduce project complexities (Archibald and Archibald, 2018; Turner, 2016).

Besides, A. Walton, (2018) pointed out that project planning should enhance role of developing communications among stakeholders and understand more about the project objectives, strategies and team members respective roles. Moreover, public sector projects encompass appropriate skills and techniques that go beyond technical expertise to manage projects, while at the same time dealing people and organizational issues. (Shuli Wang et al, (2019) concluded that relationship between stakeholders is fundamental element of project management and insisted that project stakeholders should adopt wide-ranging mechanism for integrating between themselves so that each stakeholder's resources may be maximized. Aaltomen, et.al (2008) also concluded that one of the important issues in project management is establishing relationships and manage stakeholders with engagement approaches.

Public Sector is usually consists of organizations that operated by the government often involve private initiatives to deliver services for the organizations. (Spittler and McCracken, 2018) concluded that public sector organizations also growing but also sustaining various challenges from government as well bureaucratic and political influences which breaks the concentration that obviously separates the chain of command. The structure of public sector is often poorly managed and lacks the capacity to provide public and infrastructural facilities and requires more strengthening and widening of scope (Fallahnejad, M. H. 2013).

In construction industry, stakeholders are consists of project managers, facilitation managers, designers, shareholders, legal authorities, employees, sub-contractors, suppliers, service providers, competitors, banks, insurance companies, media, general public, government agencies, visitors, customers, pressure groups, civic institutions etc. (El-Sawalhi, N. I., & Hammad, S. 2015). Many studies have been conducted on construction and public sector projects with reference to project management. However, most developing countries who are eager to invest in both public as well as private sectors consider project management as a key field in managing and executing projects as per requirements of the owners of project.

Saraph et al., (2017), the study of researchers reflected that some critical area of planning and implementation must be practiced in order to achieve effectiveness in projects. Senarantne & Malewana, (2011) in their research study, maintained that construction organizations engaged in projects must follow proper guidelines foresaw and advised future organizations should not depend on individuals

alone. Successful project management believes that project should be completed on time as per scope of project as well project's allocated budget. Nowadays, construction projects face various multi-faceted challenges including project constraints these days which cause abrupt suspension of project activities, frequent delays and project failure. More to the point, the most important task is to handle all the multiple challenges with effective stakeholder engagement plan. Problems detected in earlier stages of project should be resolved immediately to avert further project risks.

More importantly, better understanding of communication among project stakeholders with special reference to community is very important to resolve issues rather than their marginalization. Furthermore, during the construction development activity, the communities feel disappointment and engaged with other project stakeholders. In principle, the community stakeholder's protest demonstrations and strikes against the project is somehow to use pressure tactics to influence major stakeholders of the projects to address their concerns (Klamdermans and Stekelenburg, 2015).

The achievement of successful completion of project mainly depends on project performance of all project stakeholders associated with project. According to Martin Bauer (2017), the two different approaches of project stakeholders have been found. First, client-the major project stakeholder wants swift and successful project delivery on time and second, contractor wants to add more things in the existing schemes and resultantly project lead delay. Therefore, project cannot be completed on time and project budget will sprout up.

(Ogunlana et al., 2018) in their research investigations pointed out certain problems faced by developing economies in public sector project can be categorized as follows; Insufficient materials, Clients and Consultants incompetence and Contractors reluctance. Several researcher studies conducted on the subject and proposed performance model to analyze and monitor project's life cycle. (Oppong G. D., Chan, et. al., 2017) conducted research and suggested that project managers are capable of using professional technicalities to deliver project in collaboration with other stakeholders to end uncertainties, complexities and project constraints.

Literature review highlights the stakeholder role in construction project and stakeholder engagement in construction project. It was comprehensively reviewed studies from various countries regarding construction and public sectors at different times. Review also resulted that stakeholder engagement may be enhanced using different approaches and early resolution of conflicts and disputes may be resolved through proactive strategies.

After thorough review of literature, it was found that there is no study available in the present body of literature that covered in construction project in Keenjhar Lake Project. Therefore, this study will fill the gap in the literature and will provide the policy guidelines in stakeholder engagement in construction projects.

RESEARCH MATERIALS AND METHODS

In this study, comprehensive literature related to project stakeholder engagement, stakeholder management, project management, project management in construction and public sector projects, stakeholder in public sector infrastructure project were reviewed. The review of literature helps in understanding research objectives and related techniques were identified from project management journals, internet sources, digital and text books. However, the literature was thoroughly studied in critical viewpoint to understand research problem broadly.

DATA COLLECTION

Data was collected from respondents associated with project stakeholders of Keenjhar Lake Construction project through questionnaire survey. Moreover, the questionnaire survey is a part of study for collecting data to achieve research objectives. The format of questionnaire was designed from different questionnaires of previous research studies and developed after review of literature in brief. Besides, the

questionnaire was prepared on Likert Scale consisting on series from 1 to 5 (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree).

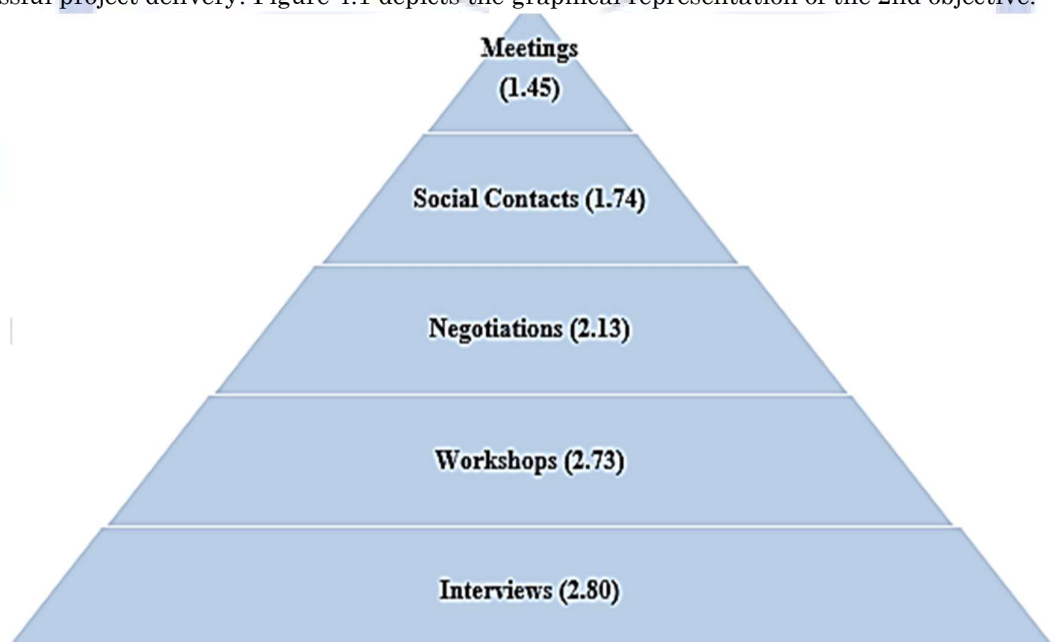
DATA ANALYSIS

This study consists of quantitative research approach that was used to collect data from stakeholders through questionnaire survey. A structured questionnaire was distributed among project stakeholders: Client, Consultants, Contractor and Community were involved in the Keenjhar Lake Project, Thatta Sindh Pakistan and data was collected through survey questionnaire. Total 114 questionnaire were received back fully filled from the respondents and data was analyzed using (Statistical Package for Social Sciences) SPSS to evaluate quantitative data analysis and observe targeted results. The data outcomes are presented in graphs.

RESULTS AND DISCUSSION

Primarily, the paper sought to assess level of stakeholder engagement in Keenjhar Lake Project, Thatta Sindh Pakistan. In addition, several stakeholders have been identified in the Keenjhar Lake Project. Project stakeholders played a very significant role in the project for achieving project goals and destined to successful deliverance of project through mutual relationships and understandings among them. A survey questionnaire was distributed among the project stakeholders to determine their viewpoint on the research study objective.

The engagement level approaches i.e. interviews, meetings, social contact, negotiations and workshops and seminar were selected for obtaining viewpoint of respondents attached with the project stakeholders through a questionnaire. However, it has been pointed out in previous research studies that several constructions projects are not meeting deadlines and could not be completed on scheduled time due to various circumstances. Basically, this project was also delayed for several years due to imminent project constraints. The static mean results describes that respondents agreed for all engagement approaches: they first chose interview, second workshops and seminar, third negotiations, fourth social contacts and fifth meetings. However, these approaches play a significant role in engagement of stakeholders that will possibly lead towards success of project. Thus, it was necessary to engage project stakeholders through their consistent engagement and earlier resolution of issues/disputes that obviously lead towards successful project delivery. Figure 4.1 depicts the graphical representation of the 2nd objective.



FINDINGS OF STUDY

- [1] It was found that most of respondents agreed for interviews as mean values shows (M=2.80)
- [2] It was found that most of respondents agreed for workshops and seminars as mean values shows (M=2.73)
- [3] It was found that most of respondents agreed for negotiations as mean values shows (M=2.13)
- [4] It was found that most of respondents agreed for social contacts as mean values shows (M=1.74)
- [5] It was found that most of respondents agreed for meetings as mean values shows (M=1.45)

DISCUSSION

Nowadays, stakeholder engagement is gradually becoming a part of construction project practice in order to deliver excellent project outcomes. For example stakeholder identification is one of the critical components of the initial scoping phase and should occur before an engagement plan is formulated and consultations begin. Karlsen et al., (2011) stated that each stakeholder usually has their own interest in the project which may cause different priorities, conflicts and dramatically increase the complexity of the situation. A well-managed stakeholder engagement process helps the project stakeholder to work together to increase comfort and quality of life, while decreasing negative environmental impacts and increasing the economic sustainability of the project. Stakeholder engagement should therefore be taken as a core element of any “sustainable development” plan. Hence a project is more likely to be successful—especially in the long-term, if it takes into consideration the expectations of the stakeholders and endeavors to meet their needs.

LEVEL OF STAKEHOLDER ENGAGEMENT

Engaging stakeholders in construction project is a formal process of relationship management among project stakeholders i.e. clients, contractors and sub-contractors engage with a set of primary and secondary stakeholders, in an effort to align their mutual interest to reduce risk in projects (Holmes 2007 & Bourne 2010). Besides, stakeholder engagement in Keenjhar Lake Water Project was measured through approaches i.e. interviews, meetings, social contact, negotiations and workshops and seminar were selected to ascertain viewpoint from project stakeholders involved in the project. More to the point, the opinions was sought from the respondents of all project stakeholders through defined stakeholder approaches and depict results.

STAKEHOLDER ENGAGEMENT PROCESS

Jeffery (2009) proposed a model of a “meaningful” stakeholder engagement process that builds a proactive two-way process between the organization and the stakeholder. Besides, communication, opinions and proposals flow in both directions and the organization can change its behavior as a result of engagement. However, this process is not actually linear; rather it is an iterative process in which an organization learns and improves its ability to perform meaningful stakeholder engagement through developing relationships of mutual respect, in place of one-off consultations. Also, analysis reveals that stakeholder engagement was more important factor in making project successful.

APPROACHES OF ENGAGING STAKEHOLDERS

The respondents were asked about their points of view regarding the effective approaches in engaging stakeholders in the construction project. Table 5.1 below shows mean statistics for analysis. According to the results of the questionnaire, 'interviews' is ranked first, followed by 'workshops & seminars', 'negotiations', 'meetings', and 'social contacts'. Interview and workshops the most common approaches for engaging stakeholders in a construction project at Thatta, Sindh. Since, the interview is face-to-face communication ensures attendees understand the issues and information that can be bring forth about opinions, they express, and formal forum easy to organize. On the other hand, workshop and seminar

provides an opportunity to engage, communicate and discuss that enable participants to raise their point of view and usually low cost and easy to arrange.

Approaches	Mean	Rank
Interviews	2.80	1
Workshops & Seminars	2.73	2
Negotiations	2.13	3
Meetings	1.74	4
Social Contacts	1.45	5

Table 5.1: Effective approaches to engage with the stakeholders

Negotiations can also be categorized as communication with stakeholders, specially settling disputes and problems. Meeting is ranked in fourth position, since project manager needs to be well facilitated, and have the interpersonal skills to deal with challenging issues, although it is an excellent approach for discussion on criteria or analysis of alternatives. Social contacts are ranked in lowest position and informal approach, but it seems to be an effective approach for establishing and maintaining relationships with some stakeholder that are used by a project manager, and it helps in building trust with stakeholders, and maximizes two-way dialogue.

MANAGING STAKEHOLDER

Managing the construction stakeholders is the practice of meeting the expectation of anyone that has an interest, impact or power on the project and will be affected by its deliverables or outputs. More to the point, (Cleland, 1995) stated that successful completion of construction project is depending on the meeting of stakeholder's expectations. Managing relationships with stakeholders helps raise the consciousness of the project and make it better prepared to deal with changing stakeholder needs; it also makes it more able to respond efficiently and effectively to the difficulties that may arise or issues that need to be resolved. In this sense, stakeholders are a major source of uncertainty; a generic project risk management process framework provides a structure for a review of approaches to analyzing stakeholders and risk management issues Ward and Chapman (2008). However, the examples of Heathrow Terminal 5 demonstrate the importance of proactive development of long-term contractual relationships with stakeholders and stakeholder engagement (Bourne, 2010).

Based on the results, it is concluded that stakeholder engagement in construction project is very important for project success. It signifies the fact that several construction projects have been failed due to lack of effective engagement however, engagement processes led projects towards successful completion. Thus, effectiveness of stakeholder engagement is one of important determinants to success of completion of project in construction industry. Thus, stakeholder engagement influences the project performance in construction industry through different approaches in identifying and resolution of project concerns through consultation process. However, it was necessary to engage project stakeholders throughout the project's lifecycle and their consistent participation obviously lead towards successful deliverance of project.

CONCLUSION

This study was conducted to investigate the case study of Keenjhar Lake Construction Project, Thatta, Sindh Pakistan. Results highlighted that there is a greater need to enhance stakeholder engagement process to understand stakeholder's expectations and perceptions. However, the study concentrated on finding stakeholders who were involved in project since 2006 till finalization of the project. Construction

projects are in fact, complex in nature, which requires project management competencies to handle and successful deliverance of project through stakeholder management approaches. Moreover, early stakeholder involvement is crucial and stakeholders should be managed differently depending on their roles, liabilities, and salience in relation to the whole project.

To identify stakeholders in Keenjhar Lake Construction Project. Four project stakeholders were identified in the project which are: client, consultants, contractor and community. They were part throughout the life cycle of project. To measure the level of stakeholder engagement in Keenjhar Lake Construction Project, five parameters were selected such as Negotiations, Social Contacts, Interview, Meeting & Workshops and through a questionnaire the viewpoint of stakeholders was obtained to conclude which level is more significant. Results indicated that interview was selected first, workshops second, negotiations third, social contacts fourth and meetings fifth as level of stakeholder engagement in the project. Therefore, these findings could also be used as an assessment tool to evaluate the performance of stakeholder management and may help to identify areas of improvement in projects. The prospect of successful stakeholder management is one of the important elements of project success. However, the project's better planning, consistency, engagement among all project stakeholders has resulted positive outcomes for project end-users. Despite the fact, that project was delayed for several years but after all, it has achieved project objectives. Three major constraints i.e: addition of few schemes, Floods of 2010 and heavy rainfalls in lower Sindh and financial constraints. These constraints hampered project one after other in the following years and caused delay of project. Floods and rains damaged project works and infrastructure on site and prompted contractor to suspend site activities, addition of new schemes in project scheme required specific budget and time and project financial constraints in principle, completely stuck project. However, analysis shows project delay in such circumstances creates more financial hurdles in meeting project objectives. On the other hand, project stakeholders involved in the project always share deep concerns regarding project's successful deliverance. The stakeholders are also tested in difficult times when project faced challenges after challenges.

Finally, the study indicated that delays are inevitable; however, they can be avoided or minimized with efforts of project management team and to deliver the project within schedule. There is a dire need of investigating construction projects from the perspective of stakeholder engagement to determine causes of project delay. Later, poor stakeholder engagements resulted in further prolongation of projects and create disturbances in the project environment. This may eventually lead to much needed development in the construction industry and project managers should mitigate risks and lead projects to successful completion. It is however, concluded that projects are basically human development schemes that play a significant role in bringing society towards prosperity and development. The successful deliverance of projects is a greater achievement and has a greater impact on the lives of the people inhabited around project areas. Nowadays, water scarcity is a big issue of Karachi city and government is engaged to prepare strategies to deal with such issues in future. Moreover, Keenjhar Lake Water Project has socio-economic, environmental as well as ecological benefits for the inhabitants of Thatta in general and Karachi in particular. Resultantly, the completion works of Keenjhar Lake Project led birth to K-IV Mega Multi Billion Water Project will ensure 650 MGD (Millions Gallons per day) to Karachi through Keenjhar Lake System and its completion will be expected in 2025.

RECOMMENDATIONS

- [1] Stakeholder engagement in construction/public sector projects will be improved if following suggestions will be undertaken
- [2] Level of stakeholder's engagement may be enhanced. This suggests that stakeholders are important part of construction project, therefore, it is recommended that project management should adopt proactive engagement strategies to make project more sustainable.

- [3] Project objectives should be clearly communicated to every stakeholder. This suggests that project authorities should convince all parties involving project and positively communicate every stakeholder specially beneficiaries of project's long-term benefits.
- [4] All project stakeholders should be involved in every phase of project life cycle and complete project through efficient and effective stakeholder engagement.

FUTURE RESEARCH DIRECTIONS

This study has focused on stakeholder engagement in Keenjhar Lake Water Project. Scope of this stakeholder investigation should be to further broaden through motivation of stakeholders, measuring the performance and the impact of stakeholder in Keenjhar Lake Water Project related to stakeholder engagement in construction industry.

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